

CLAIMS  
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1. A femur fixture (1) for a hip-joint prosthesis, comprising an intraosseous anchoring structure (3) of a generally circular cross-section for screwing laterally into a complementary bore drilled laterally into the neck of a femur after resection of the femur head to an anchored position, the intraosseous anchoring structure (3) having a proximal end, a distal end, a relatively short frusto-conical proximal section (18) at the proximal end, and a proximal cylindrical section (11) having a screw thread profile thereon and extending towards the distal end from the frusto-conical proximal section (18), the frusto-conical proximal section (18) and the proximal cylindrical section (11) each being dimensioned so as to bear against the cortex of the femur neck when the intraosseous anchoring structure (3) is in the anchored position.
2. The femur fixture (1) as claimed in claim 1, wherein the intraosseous anchoring structure (3) is so dimensioned that its distal end projects through the lateral cortex (34) of the femur when the intraosseous anchoring structure (3) is in the anchored position.
3. The femur fixture (1) as claimed in claim 1 or 2, wherein the intraosseous anchoring structure (3) further has a distal cylindrical section (13) having a screw thread profile thereon and extending towards the proximal cylindrical section (11) from the distal end of the intraosseous anchoring structure (3), the diameter of said distal cylindrical section (11) being less than the diameter of said proximal cylindrical section (13).
4. The femur fixture (1) as claimed in claim 3, wherein the screw thread profiles of said proximal and distal cylindrical sections (11, 13) are essentially the same.
5. The femur fixture (1) as claimed in claim 3 or 4, wherein said intraosseous anchoring structure (3) further

15

comprises a tapered connecting section (15) provided between and interconnecting said proximal and distal cylindrical sections (11, 13).

6. The femur fixture (1) as claimed in claim 5,  
5 wherein said connecting section (15) has a frusto-conical  
shape which at one end has a base diameter essentially  
equal to the diameter of said proximal cylindrical sec-  
tion (11), and at the other end has a top diameter essen-  
tially equal to the diameter of said distal cylindrical  
10 section (13).

7. The femur fixture (1) as claimed in claim 5 or 6,  
wherein said connecting section (15) has a flank angle in  
the range of 15°-45°, preferably in the range of 20°-40°.

8. The femur fixture (1) as claimed in any one of  
15 claims 5-7, wherein said connecting section (15) is at  
least partly provided with a blasted surface, preferably  
a grit-blasted surface.

9. The femur fixture (1) as claimed in any one of  
claims 5-8, wherein said connecting section (15) is at  
20 least partly provided with a circumferentially oriented  
roughness, preferably in the form of circumferential  
beads or screw threads.

10. The femur fixture (1) as claimed in claim 9,  
wherein said circumferentially oriented roughness has a  
25 height less than that of the screw thread profiles of  
said proximal and distal cylindrical sections (11, 13).

11. The femur fixture (1) as claimed in claim 9 or  
10, wherein the height of said circumferentially oriented  
roughness is no greater than 0.3 mm, preferably in the  
30 range of 0.1-0.25 mm, and even more preferably approxi-  
mately 0.2 mm.

12. The femur fixture (1) as claimed in any one of  
claims 5-11, wherein said connecting section (15) is at  
least partly provided with a smooth surface.

35 13. The femur fixture (1) as claimed in any one of  
claims 5-7, wherein the entire surface of said connecting  
section (15) is smooth.

16

14. The femur fixture (1) as claimed in any one of claims 5-13, wherein one or more self-tapping cutting recesses (14) are provided at least in part on said connecting section (15).

5 15. The femur fixture (1) as claimed in any one of the preceding claims, wherein said frusto-conical proximal section (18) at an end thereof interfacing said proximal cylindrical section (11) presents a diameter essentially equal to the diameter of said proximal cylindrical section (11).

10 16. The femur fixture as claimed in any one of the preceding claims, wherein said frusto-conical proximal section (18) has a flank angle in the range of 8-15°, preferably in the range of 10-13°, and even more preferably approximately 12°.

15 17. The femur fixture (1) as claimed in any one of the preceding claims, wherein the frusto-conical proximal section (18) has an axial extent in the range of 5-10 mm, preferably approximately 8 mm.

20 18. The femur fixture (1) as claimed in any one of the preceding claims, wherein the frusto-conical proximal section (18) has a proximal diameter in the range of 18-30 mm.

25 19. The femur fixture (1) as claimed in any one of the preceding claims, wherein the frusto-conical proximal section (18) is at least partly provided with a roughened surface.

30 20. The femur fixture (1) as claimed in claim 19, wherein said roughened surface is at least partly a blasted surface, preferably a grit-blasted surface.

21. The femur fixture (1) as claimed in claim 19 or 20, wherein said roughened surface is at least partly provided with a circumferentially oriented roughness.

35 22. The femur fixture (1) as claimed in claim 21, wherein said circumferentially oriented roughness is in the shape of a screw thread profile.

23. The femur fixture (1) as claimed in claim 22, wherein the screw thread profile of said frusto-conical proximal section (18) differs from the screw thread profiles of said proximal cylindrical section (11).

5 24. The femur fixture (1) as claimed in claim 23, wherein the screw thread profile of said frusto-conical proximal section (18) has a height less than the screw thread profile of said proximal cylindrical section (11).

10 25. The femur fixture (1) as claimed in any one of claims 22-24, wherein the height of the screw thread profile on the frusto-conical proximal section (18) is no greater than 0.3 mm, preferably in the range of 0.1-0.25 mm, and even more preferably approximately 0.2 mm.

15 26. The femur fixture (1) as claimed in any one of claims 22-25, wherein the screw thread profile on the frusto-conical proximal section (18) is formed by the turns of one or more screw threads.

20 27. The femur fixture (1) as claimed in claim 21, wherein said circumferentially oriented roughness is in the form of circumferential beads.

25 28. The femur fixture (1) as claimed in claim 27, wherein said circumferential beads has a height less than that of the screw thread profile of said proximal cylindrical section (11).

29. The femur fixture (1) as claimed in claim 27 or 28, wherein the height of said circumferential beads is no greater than 0.3 mm, preferably in the range of 0.1-0.25 mm, and even more preferably approximately 0.2 mm.

30 30. The femur fixture (1) as claimed in any one of the preceding claims, further comprising a head section (5) for supporting a ball component (25) of the hip-joint prosthesis, said head section (5) comprising a collar section (20) having a distal surface (21) abutting said intraosseous anchoring structure (3).

35 31. The femur fixture (1) as claimed in claim 30, wherein said distal surface (21) is inclined inwardly towards the body of the collar section (20).

32. The femur fixture (1) as claimed in claim 31, wherein said distal surface (21) is inclined inwardly at an inclination angle within the range of 10°-20°, preferably approximately 15°.

5 33. The femur fixture (1) as claimed in claim 30, wherein said distal surface (21) is concave.

34. The femur fixture (1) as claimed in any one of claims 30-33, wherein said distal surface (21) is provided with radially spaced circular beads (22).

10 35. The femur fixture (1) as claimed in claim 34, wherein said circular beads have a height in the range of 0.1-0.5 mm, preferably in the range of 0.2-0.4 mm, and even more preferably approximately 0.3 mm.

15 36. A set of femur fixtures according to any one of the preceding claims, wherein the frusto-conical proximal section (18) and the proximal cylindrical section (11) of each fixture (1) in the set have different dimensions, whereby the fixture in the set having the frusto-conical proximal section (18) and the proximal cylindrical section (11) of correct size for abutting the cortex of the 20 femur neck of a particular patient can be selected for use in that patient.

25 37. A set of femur fixtures according to claim 3, wherein the distal cylindrical sections (13) of all fixtures (1) in the set have the same dimension, and the frusto-conical proximal section (18) and the proximal cylindrical section (11) of each fixture (1) in the set have different dimensions, whereby the fixture in the set having the frusto-conical proximal section (18) and the proximal cylindrical section (11) of correct size for 30 abutting the cortex of the femur neck of a particular patient can be selected for use in that patient.